

Single-phase Top/Bottom Terminal SSR with Integrated Heatsink [Voltage Input Type]



SRH1 Series CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- High heat dissipation efficiency with ceramic PCB and integrated heatsink
- Input Indicator (green)
- DIN rail mount or panel mount installation
- Zero cross turn-on / Random turn-on models available

Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

SRH1 - ① ② ③ ④ - N

① Rated input voltage

1: 4 - 30 VDC=
2: 24 VAC~
4: 90 - 240 VAC~

② Rated load voltage

2: 24 - 240 VAC~
4: 48 - 480 VAC~

③ Rated load current

Number: Rated load current (unit: A)

④ Function

No-mark: Zero cross turn-on
R: Random turn-on

Product Components

- Product
- Instruction manual

Specifications

Input

Rated input voltage range	4 - 30 VDC≒	24 VACrms~ (50 / 60 Hz)	90 - 240 VACrms~ (50 / 60 Hz)
Allowable input voltage range	4 - 32 VDC≒	19 - 30 VACrms~ (50 / 60 Hz)	85 - 264 VACrms~ (50 / 60 Hz)
Max. input current	18 mA	15 mA (24 VACrms~)	18 mA (240 VACrms~)
Operating voltage	≥ 4 VDC≒	≥ 19 VACrms~	≥ 85 VACrms~
Releasing voltage	≤ 1 VDC≒	≤ 4 VACrms~	≤ 10 VACrms~
Operating time	Zero cross turn-on	≤ 0.5 cycle of load power + 1 ms	≤ 2 cycle of load power + 1 ms
	Random turn-on	≤ 1 ms	-
Releasing time	≤ 0.5 cycle of load power + 1 ms	≤ 2 cycle of load power + 1 ms	≤ 2 cycle of load power + 1 ms


Output

Rated load voltage range	24 - 240 VACrms~ (50 / 60 Hz)						
Allowable load voltage range	24 - 264 VACrms~ (50 / 60 Hz)						
Rated load current	Resistive load (AC-51) ⁰¹⁾	10 Arms	15 Arms	20 Arms	30 Arms	40 Arms	60 Arms
	Min. load current	0.15 Arms	0.15 Arms	0.2 Arms	0.5 Arms	0.5 Arms	0.5 Arms
Max. 1 cycle surge current (60 Hz)	160 A	160 A	250 A	400 A	500 A	1000 A	1000 A
Max. non-repetitive surge current (I ² t, t = 8.3 ms)	130 A ² s	130 A ² s	300 A ² s	910 A ² s	1000 A ² s	4000 A ² s	4000 A ² s
Peak voltage (non-repetitive)	600 V						
Leakage current (Ta = 25 °C)	≤ 10 mA (240 VAC~/60 Hz)						
Output ON voltage drop [Vpk] (max. load current)	≤ 1.6 V						
Static off state dv/dt	500 V/μs						

Rated load voltage range	48 - 480 VACrms~ (50 / 60 Hz)						
Allowable load voltage range	48 - 528 VACrms~ (50 / 60 Hz)						
Rated load current	Resistive load (AC-51) ⁰¹⁾	10 Arms	15 Arms	20 Arms	30 Arms	40 Arms	60 Arms
	Min. load current	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms
Max. 1 cycle surge current (60 Hz)	300 A	300 A	300 A	500 A	500 A	1000 A	1000 A
Max. non-repetitive surge current (I ² t, t = 8.3 ms)	350 A ² s	350 A ² s	350 A ² s	1000 A ² s	1000 A ² s	4000 A ² s	4000 A ² s
Peak voltage (non-repetitive)	1200 V (Zero cross turn-on), 1000 V (Random turn-on)						
Leakage current (Ta = 25 °C)	≤ 10 mA (480 VAC~/60 Hz)						
Output ON voltage drop [Vpk] (max. load current)	≤ 1.6 V						
Static off state dv/dt	500 V/μs						

01) AC-51 is utilization category at IEC60947-4-3.

General specifications

Dielectric strength (Vrms)	Input-output, input/output-case : 2500 VAC~ 50 / 60 Hz for 1 min
Insulation resistance	Input-output, input/output-case : ≥ 100 MΩ (500 VDC≒ megger)
Indicator	Input indicator (green)
Vibration	0.75 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 1 hour
Vibration (malfunction)	0.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 10 min
Shock	300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times
Ambient temperature ⁰¹⁾	-30 to 80 °C (in case of the rated input voltage 90 - 240 VAC~: -20 to 70 °C), storage: -30 to 100 °C (no freezing or no condensation)
Ambient humidity	45 to 85 %RH, storage: 45 to 85 %RH (no freezing or no condensation)
Input terminal connection	≥ 1 × 0.5 mm ² (1 × AWG 20), ≤ 1 × 1.5 mm ² (1 × AWG 16) or ≤ 2 × 1.5 mm ² (2 × AWG 16)
Output terminal connection ⁰²⁾	Rated load current 10 / 15 / 20 A : ≥ 1 × 0.75 mm ² (1 × AWG 18), ≤ 1 × 4 mm ² (1 × AWG 12) or ≤ 2 × 2.5 mm ² (2 × AWG 14) Rated load current 30 / 40 / 60 A : ≥ 1 × 1.5 mm ² (1 × AWG 16), ≤ 1 × 16 mm ² (1 × AWG 6) or ≤ 2 × 6 mm ² (2 × AWG 10)
Input terminal fixed torque	0.75 to 0.95 N m
Output terminal fixed torque	Rated load current 10 / 15 / 20 A: 1.0 to 1.35 N m Rated load current 30 / 40 / 60 A: 1.6 to 2.2 N m
Approval	CE  ENEC
Weight (packaged)	Rated load current 10 / 15 / 20 A: ≈ 225 g (≈ 298 g) Rated load current 30 / 40 A: ≈ 410 g (≈ 500 g) Rated load current 60 A: ≈ 680 g (≈ 770 g)

01) See the 'SSR Derating Curve' in the product manual because the capacity of the rated load current is differ depending on the ambient temperature.

02) Connect the wire met the capacity of the load current to the output terminal.

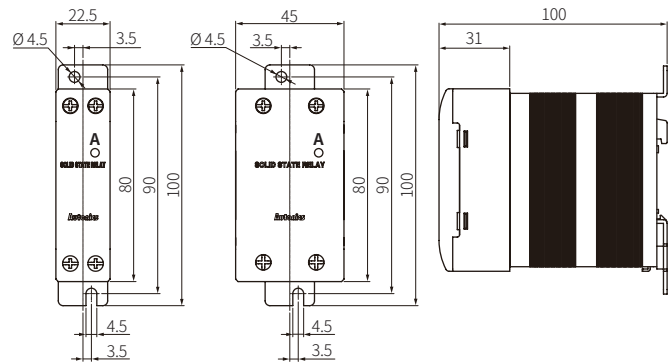
Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics website.

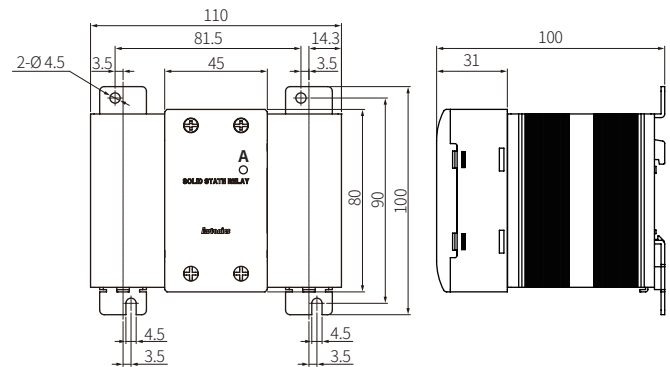
A Input indicator (green)

• When installing to the panel, tightening the screw with a torque of 1.8 to 2.5 N m.

Rated load current 10 / 15 / 20 A



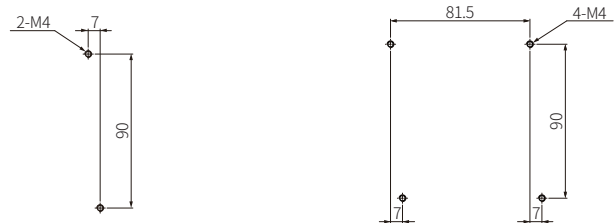
Rated load current 60 A



Panel cut-out

• Rated load current 10 / 15 / 20 / 30 / 40 A

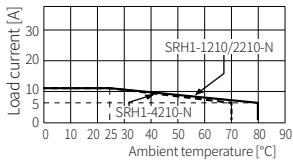
• Rated load current 60 A



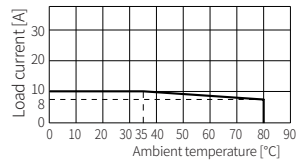
SSR Derating Curve

- Be aware that the ambient temperature and the derating curve is different by the rated input voltage when using the product.
- ⚠ Since the effectiveness of the heat radiation is decreased when multiple SSRs are installed closely, be sure to supply less than 50 % of the rated load current.
- SSR derating curves obtained approval from the UL certification authority.

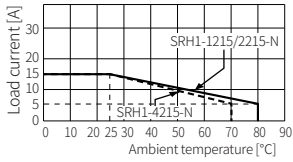
■ SRH1-1210 / 2210 / 4210-N



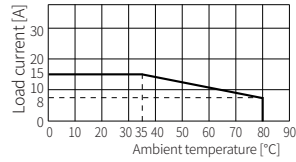
■ SRH1-1410 / 1410R / 2410-N



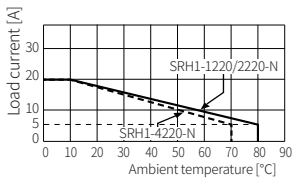
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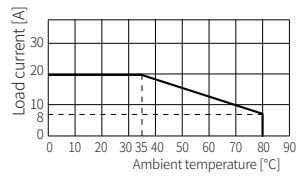
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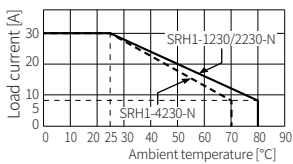
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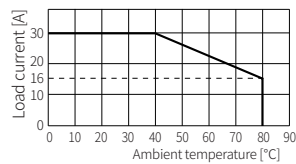
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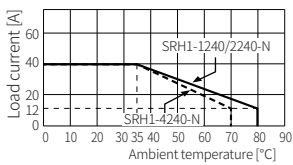
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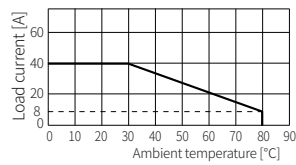
■ SRH1-1430/1430R/2430-N



■ SRH1-1240 / 2240 / 4240-N



■ SRH1-1440/1440R/2440-N



■ SRH1-1260 / 1460 / 1460R-N SRH1-2260 / 2460 / 4260-N

